JOB SHEET 2-4-32
USER FUNCTIONS USING THE DISPLAY MENU
Graphic Tablet and Applications Terminal Input

INTRODUCTION

At times it is important to have a User Function display a specific resolution or a particular elevation angle. The best way to accomplish this is through the Display Menu as most of the function boxes in the "parameter" section, of the graphics tablet, do not work in a User Function definition.

OBJECTIVE

Create a User Function to display a 4 panel product via the Display Menu.

REFERENCE

NWS EHB 6-531-1, USERS GUIDE: PUP/RPGOP, Section 11.0

PROCEDURE

DEFINE USER FUNCTION 4

1.   From the Main Menu, type **U** and press **RETURN**.

   -    The User Function Menu displays.

2.   Type **D,4,LOWEST_FOUR_REF_LEFT_54NM_8X** and press **RETURN**.

   -    This User Function calls up, from your data base, the lowest four elevation angles of a 16 data level, .54NM, Base Reflectivity product. To get the specific quadrant, data level, resolution, and slices the Applications Terminal is used. The magnification is done using the Graphic Tablet.

1

MAIN MENU

COMMAND: **U**
FEEDBACK:

Enter command and press return. For assistance, press the HELP button (F5).

(C)ONTROL
(S)TATUS
(D)ISPLAY
(R)OUTINE PRODUCT SET
(G)EN AND DISTRIBUTE PRODUCTS
(T)IME LAPSE
(A)RCHIVE
(U)SER FUNCTION
(AD)APTATION DATA
(M)ONITOR PERFORMANCE
(H)ELP

UNACKNOWLEDGED ALERTS   ALPHA PRODUCT QUEUE INDICATOR
ACKNOWLEDGED ALERTS   RPG PRODUCT REQUEST STATUS
SYSTEM STATUS

2

USER FUNCTION MENU

COMMAND: **U,D,4,LOWEST_FOUR_REF_LEFT_54NM_8X**
FEEDBACK:

Enter command.

(E)XECUTE, <UF#>,<rpg>
(C)ANCEL EXECUTION
(D)EFINE, <UF#>, <title>
(EN)D DEFINE AND EXAMINE *,   (E)ND UF
                                   <UF#>, **[**User Function # to receive control**]**
(W)AIT, <SECONDS>
(EXA)MINE,   (T)ITLES
                  <UF#> * **[**Examine and edit**]**

*Note: Edit commands are available when the User Function Examine screen is displayed.

3.   a.   Type **D,G,R** (**typing over the "U"**) and press **RETURN**.

-    It is necessary to type over the "U" since this is a command from the (**D)**isplay Menu, not the User Function Menu. The Display Menu, with the "default" parameters for the Base Reflectivity product , displays.

   b.   Making sure the product has these parameters:

DTA LVL	RES	SLICE	SCR
16	**.54**	**0.5**	**L1**

-    When executed, this displays the defined product in quadrant **1** of the **Left Screen**. The date/time/RPG are left blank to get the most recent product of this type from the Associated RPG.

-    Press **RETURN** after completing the line.

4.   Ensure the command line reads **D,G,R** and press **RETURN**.

5.   TAB through as before, this time making the SLICE **1.5°** and the SCR **L2**, with everything else the same as in step 3.   Press **RETURN** upon completion.

-    This puts the 1.5°, .54 nm Base Reflectivity product in quadrant 2.

6.   Ensure the command line reads **D,G,R** and press **RETURN**.

7.   TAB through as before, making the SLICE **2.4º,** and the SCR **L3**, then press **RETURN**.

8.   Type **D,G,R** and press **RETURN**.

9.   TAB through as before, making the SLICE **3.4º** and the SCR **L4**, then press **RETURN**.

10.   At the Command Line, type **U,W,5** (**typing over the D**) and press **RETURN**.

-    This wait command, from the User Function Menu, is necessary to allow the RAMTEK time to finish processing the commands already received. The wait is nearly invisible as your User Function runs.   Without the wait, the RAMTEK may "skip" a command. The length of the wait, up to 3600 seconds, depends on the amount of background maps/overlays associated to the product being displayed. You may need more or less "wait" time depending on these associations.

```
┌──────────────────────────────────────────────────────────────────────────────┐
│                    DISPLAY GRAPHIC PRODUCT EDIT SCREEN                          │
│                                                                                │
│    COMMAND: D,G,R                                                              │
│    FEEDBACK:                                                                   │
│                                                                                │
│    Edit product parameters and press RETURN to request product.               │
│                                                                                │
│    PROD    DTA                                                REQ RPT REQ       │
│    NAME    LVL  RES  SLICE  PARAM1  PARAM2    RPG  TIME   DATE    SCR   PRI CNT MAP │
│    R       16   .54   0.5                                         L1    H   1   N  │
│                                                                                │
│                                                                                │
│                                                                                │
└──────────────────────────────────────────────────────────────────────────────┘
```

3b

```
┌──────────────────────────────────────────────────────────────────────────────┐
│                           USER FUNCTION MENU                                   │
│                                                                                │
│    COMMAND:  U,W,5                                                             │
│    FEEDBACK:                                                                   │
│                                                                                │
│    Enter command.                                                              │
│                                                                                │
│    (E)XECUTE, <UF#>, <rpg>                                                     │
│    (C)ANCEL EXECUTION                                                          │
│    (D)EFINE, <UF#>, <title>                                                    │
│    (EN)D DEFINE AND EXAMINE *,        (E)ND UF                                 │
│                                       <UF#>,  [User Function # to receive control] │
│                                                                                │
│    (W)AIT, <SECONDS>                                                           │
│    (EXA)MINE,        (T)ITLES                                                  │
│                      <UF#> *  [Examine and edit]                               │
│                                                                                │
│                                                                                │
│       *Note:        Edit commands are available when the User Function Examine screen is │
│                     displayed.                                                 │
│                                                                                │
└──────────────────────────────────────────────────────────────────────────────┘
```
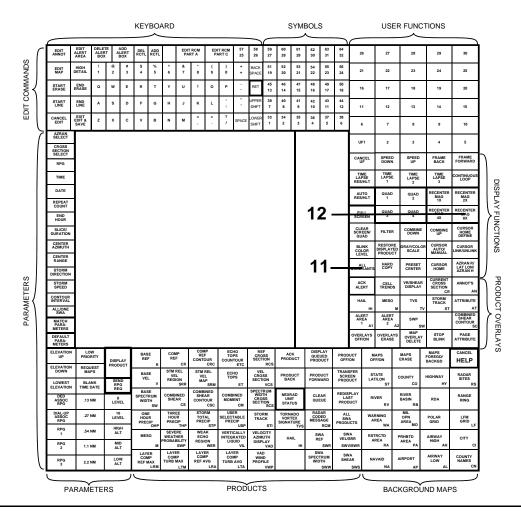
10

11.   At the graphic tablet, select **ALL QUADRANTS** with the **LEFT** button.

-    This command tells the PUP to do the next step of the User Function, in this case Recenter/Mag 8X, to all four quadrants on the left screen. Note that after "Recenter/Mag 8X" is processed for all four quadrants the ALL QUADRANTS function reverts back to ONE QUADRANT (the default).

12.   Select **RECENTER/MAG 8X** with the **LEFT** button.

-    When the User Function is executed, all 4 quadrants are magnified on a pre-selected point. Remember to select your point of interest either before the User Function is started or make your WAIT long enough to select a point.

13.   Type **U,EN,E** and press **RETURN.**

-    This command ends the User Function definition and displays the list of commands. Note that the information given by this list is rather cryptic. We know that 4 Base Reflectivity products in quadrants are displayed on the left screen, but we don't know which slices/resolutions were used. This is why the title of a User Function can be useful.

14.   Due to editing of this Job Sheet , step 14 is intentionally left blank.

GRAPHIC TABLET

KEYBOARD **SYMBOLS** **USER FUNCTIONS**

EDIT COMMANDS

PARAMETERS

DISPLAY FUNCTIONS

PRODUCT OVERLAYS

12

11

PARAMETERS PRODUCTS BACKGROUND MAPS

EXAMINE/EDIT USER FUNCTION 4: **LOWEST_FOUR_REF_LEFT_54NM_8X**

COMMAND: **U,**
FEEDBACK: **UF4 DEFINITION COMPLETE**

EDIT CMDS: [EACH EDIT CMD MUST BE PRECEDED BY '(U)SER FUNCTION',]
  (DEL)ETE,<LINE#>   (R)EPLACE END, [(E)ND OR <UF#>]
  (I)NSERT,<LINE#>   (REN)AME UF TITLE,<NEW TITLE>

13

1.   D,G,R   L1
2.   D,G,R   L2
3.   D,G,R   L3
4.   D,G,R   L4
5.   U,W,5
6.   ALL QUADRANTS   L
7.   RECENTER/MAGNIFY 8X   L
8.   **U,EN,E**

15.   From the Graphic Tablet, display a **BASE REF** product (right screen).

16.   Use the Base Reflectivity product to select a point on a storm of interest, preferably at a range greater than 60 nm (right screen).

-    This point becomes the last selected point and the point our User Function will magnify on.

       NOTE - The operator may choose to omit all magnification functions from the User Function definition. The User Function will then just display the products. You can then use the ALL QUADRANTS box to "manually" magnify all 4 quadrants centered on the point selected. The choice is up to the operator.

There are 2 ways to invoke this User Function.

AT THE GRAPHIC TABLET:

17.   Select **UF4** (either button).

-    The User Function displays and magnifies the products we specified. This particular User Function is used to diagnose the vertical Reflectivity structure of a storm at longer ranges. A similar User Function, but with higher slices would be appropriate for storms at closer ranges. With cursors linked, you can see storm tilt, overhang, relationships of WERS and BWERs to low level echoes, and the height of Reflectivity cores.

AT THE APPLICATIONS TERMINAL:

18.   At the User Function Menu, type **E,4;** (after the "U") and press **RETURN**.

-    This (**E**)xecutes <**UF#4**>.

       NOTE THAT:

-    When defining this User Function an asterisk was not placed in the RPG column. That is, the RPG column was left blank when you defined the 4 Base Reflectivity products. Therefore the RPG and displayed products will always be from our Associated RPG.

-    In this job sheet invoking the User Function either from the Graphics Tablet or the Applications Terminal has the same effect .

END

GRAPHIC TABLET

KEYBOARD   SYMBOLS   USER FUNCTIONS

EDIT COMMANDS

| EDIT ANNOT | EDIT ALERT AREA | DELETE ALERT BOX | ADD ALERT BOX | DEL RCTL | ADD RCTL | EDIT RCM PART A | EDIT RCM PART C | 57 25 | 58 26 | 59 27 | 60 28 | 61 29 | 62 30 | 63 31 | 64 32 | 26 | 27 | 28 | 29 | 30 |

| EDIT MAP | HIGH DETAIL | ! 1 | @ 2 | # 3 | $ 4 | % 5 | ^ 6 | & 7 | * 8 | (9 |) 0 | + = | BACK SPACE | 51 19 | 52 20 | 53 21 | 54 22 | 55 23 | 56 24 | 21 | 22 | 23 | 24 | 25 |

| START ERASE | END ERASE | Q | W | E | R | T | Y | U | I | O | P | - | RET | 45 13 | 46 14 | 47 15 | 48 16 | 49 17 | 50 18 | 16 | 17 | 18 | 19 | 20 |

| START LINE | END LINE | A | S | D | F | G | H | J | K | L | : ; | " ' | UPPER SHIFT | 39 7 | 40 8 | 41 9 | 42 10 | 43 11 | 44 12 | 11 | 12 | 13 | 14 | 15 |

| CANCEL EDIT | EXIT EDIT & SAVE | Z | X | C | V | B | N | M | < , | > . | ? / | SPACE | LOWER SHIFT | 33 1 | 34 2 | 35 3 | 36 4 | 37 5 | 38 6 | 6 | 7 | 8 | 9 | 10 |

PARAMETERS (left column)

AZRAN SELECT
CROSS SECTION SELECT
RPG
TIME
DATE
REPEAT COUNT
END HOUR
SLICE/ DURATION
CENTER AZIMUTH
CENTER RANGE
STORM DIRECTION
STORM SPEED
CONTOUR INTERVAL
ALL/ONE SWA
MATCH PARA- METERS
DEFAULT PARA- METERS

16 ⊕

17 — | UF1 | 2 | 3 | 4 | 5 |

DISPLAY FUNCTIONS / PRODUCT OVERLAYS

CANCEL UF	SPEED DOWN	SPEED UP	FRAME BACK	FRAME FORWARD
TIME LAPSE RES/HLT	TIME LAPSE 1	TIME LAPSE 2	TIME LAPSE 3	CONTINUOUS LOOP
AUTO RES/HLT	QUAD 1	QUAD 2	RECENTER MAG 1X	RECENTER MAG 2X
FULL SCREEN	QUAD 3	QUAD 4	RECENTER MAG 4X	RECENTER MAG 8X
CLEAR SCREEN/ QUAD	FILTER	COMBINE DOWN	COMBINE UP	CURSOR HOME DEFINE
BLINK COLOR LEVEL	RESTORE DISPLAYED PRODUCT	GRAY/COLOR SCALE	CURSOR AUTO/ MANUAL	CURSOR LINK/UNLINK
ALL QUADRANTS	HARD COPY	PRESET CENTER	CURSOR HOME	AZRAN R/ LAT LON/ AZRAN H
ACK ALERT	CELL TRENDS	VR/SHEAR DISPLAY	CURRENT CROSS SECTION CR	ANNOT'S AN
HAIL HI	MESO M	TVS TV	STORM TRACK ST	ATTRIBUTE AT
ALERT AREA 1 A1	ALERT AREA 2 A2	SWP SW		COMBINED SHEAR CONTOUR SC
OVERLAYS OFF/ON	OVERLAYS ERASE	MAP OVERLAY DELETE	STOP BLINK	PAGE ATTRIBUTE

15

PARAMETERS / PRODUCTS / BACKGROUND MAPS

ELEVATION UP	LOW PRIORITY	DISPLAY PRODUCT	BASE REF R	COMP REF CR	COMP REF CONTOUR CRC	ECHO TOPS COUNTOUR ETC	REF CROSS SECTION RCS	ACK PRODUCT	DISPLAY QUEUED PRODUCT	PRODUCT OFF/ON	MAPS OFF/ON	MAPS ERASE	MAPS FOREGD/ BACKGD	CANCEL HELP
ELEVATION DOWN	REQUEST MAPS	SEND RPG REQ	BASE VEL V	STM REL VEL REGION SRR	STM REL VEL MAP SRM	ECHO TOPS ET	VEL CROSS SECTION VCS	PRODUCT BACK	PRODUCT FORWARD	TRANSFER SCREEN PRODUCT	STATE LAT/LON ST	COUNTY CO	HIGHWAY HY	RADAR SITES RS
LOWEST ELEVATION	BLANK TIME DATE		BASE SPECTRUM WIDTH SW	COMBINED SHEAR CS	COMBINED SHEAR CONTOUR CSC	COMBINED MOMENT CM	SPECTRUM WIDTH CROSS SECTION SCS	NEXRAD UNIT STATUS	CLEAR QUEUE	REDISPLAY LAST PRODUCT	RIVER RV	RIVER BASIN RB	RDA	RANGE RING
DED ASSOC RPG	.13 NM	8 LEVEL	ONE HOUR PRECIP OHP	THREE HOUR PRECIP THP	STORM TOTAL PRECIP STP	USER SELECTABLE PRECIP USP	STORM TRACK STI	TORNADO VORTEX SIGNATURE TVS	RADAR CODED MESSAGE RCM	ALL SWA PRODUCTS	WARNING AREA WA	MIL OPN AREA MO	POLAR GRID	LFM GRID LF
DIAL-UP ASSOC RPG	.27 NM	16 LEVEL	MESO M	SEVERE WEATHER PROBABILITY SWP	WEAK ECHO REGION WER	VERTICALLY INTEGRATED LIQUID VIL	VELOCITY AZIMUTH DISPLAY VAD	HAIL HI	SWA REF SWR	SWA VEL/SRR SWV/SWR	RSTRCTD AREA RA	PRHBTD AREA PA	AIRWAY HIGH AH	CITY CI
RPG 1	.54 NM	HIGH ALT												
RPG 2	1.1 NM	MID ALT	LAYER COMP REF MAX LRM	LAYER COMP TURB MAX LTM	LAYER COMP REF AVG LRA	LAYER COMP TURB AVG LTA	VAD WIND PROFILE VWP		SWA SPECTRUM WIDTH SWW	SWA SHEAR SWS	NAVAID NA	AIRPORT AP	AIRWAY LOW AL	COUNTY NAMES CN
RPG 3	2.2 NM	LOW ALT												

PARAMETERS   PRODUCTS   BACKGROUND MAPS

USER FUNCTION MENU

18

COMMAND: **U,E,4;**
FEEDBACK:

Enter command.

(E)XECUTE, <UF#>, <rpg>
(C)ANCEL EXECUTION
(D)EFINE, <UF#>, <title>
(EN)D DEFINE AND EXAMINE *,   (E)ND UF
                                                          <UF#>, [User Function # to receive control]
(W)AIT, <SECONDS>
(EXA)MINE,   (T)ITLES
                         <UF#> * [Examine and edit]

   *Note: Edit commands are available when the User Function Examine screen is
                         displayed.